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08/147,800 11/05/93 SACHS

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DARBE, V EXAMINER

B3M1/1114

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ART UNIT

PAPER NUMBER

2302

6

DATE MAILED: 11/14/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined Responsive to communication filed on 9-13-94 This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. Claims 1-23 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. Claims _____ have been cancelled.

3. Claims _____ are allowed.

4. Claims 1-23 are rejected.

5. Claims _____ are objected to.

6. Claims _____ are subject to restriction or election requirement.

7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. Formal drawings are required in response to this Office action.

9. The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are acceptable. not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been approved by the examiner. disapproved by the examiner (see explanation).

11. The proposed drawing correction, filed on _____, has been approved. disapproved (see explanation).

12. Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has been received not been received been filed in parent application, serial no. _____; filed on _____.

13. Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. Other _____

EXAMINER'S ACTION

Art Unit: 2302

Response to Amendment

1. Claims 1-23 remain for examination.
2. This action is responsive to applicants' amendment filed September 13, 1994.
3. Applicants' arguments filed September 13, 1994 have been fully considered but they are not deemed to be persuasive. In addition, some claims have been rejected on new grounds as detailed below.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
5. Regarding:

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- the rejections of claims under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention,

- the rejections of claims 1-9 under 35 U.S.C. § 102(e) citing Iizuka, U.S. Patent No. 5,299,321

- and the rejection of claims 20 and 21 under 35 U.S.C. § 102(e) citing Kumar et al, U.S. Patent No. 5,197,137:

The statement of the amendment, paragraph 3d, that "the size of the groups is arbitrary and typically will range from one instruction to the number of instructions which will fit within the register, cache line, etc." appears to directly contradict claims 4,5,6,8,20,21 in that a single "group" of instructions could occupy all of a cache line, register, etc. Pipeline assignment and group assignment correlate to the instruction decoding into microinstructions, and associating the microinstruction to a column (pipeline) and row (group) during compilation as disclosed in Iizuka, Col. 7, line 38 et seq. The claimed storage means correlates to the general register or the multiple-port register as disclosed in various embodiments (Iizuka, Col. 3, line 45 et seq.). The rejections of claims 1-9 under 35 U.S.C. § 102(e) as being anticipated by Iizuka as given in the previous office action are maintained.

6. Claim 10 is rejected under 35 U.S.C. § 102(e) as being anticipated by Iizuka, U.S. Patent No. 5,299,321. In response to Applicant's argument that certain terms e.g. "group identifier",

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"pipeline identifier" are described throughout the specification and are "associated" with instructions but not necessarily physically connected, Iizuka associates a pipeline identifier (column) and group identifier (row) to instructions as detailed in Col. 7, line 38 et seq.

7. Regarding the desire to refrain from being more specific regarding connectivity of elements in apparatus claims, e.g. "allow the selection means to be connected to receive the group identification and not specify where that group identification originates" (page 16 of the amendment); such functional language renders the claims as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. MPEP § 706.03(f). Therefore, apparatus claims 11-19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 11-23 are rejected under 35 U.S.C. § 102(b) as being anticipated by Morrison et al., U.S. Patent No. 4,847,755. Morrison discloses a computer architecture which dispatches instructions to a plurality of processing elements through a switching network (figure 6). Information is associated with

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each instruction regarding the processing element and the firing time for execution of the instruction (Col. 17, line 54 et seq.). The "group identifier" correlates to the firing time and the "pipeline identifier" correlates to the logical processor number. The router correlates to the logical resource drivers (LRDs, element 620, figure 6) which are responsible for delivering each instruction to the appropriate processing element (Col. 18, line 10 et seq.) through the PE-LRD network when the firing time associated with the instruction occurs. The crossbar network corresponds to the PE-LRD network. The logical resource drivers provide instruction storage prior to the instruction being sent to the processing elements, storing more than one group, i.e. instructions with different firing times. Pipeline processing elements are disclosed in Col. 42 line 11 et seq.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and is as follows:

- Wetzel, U.S. Patent No. 5,203,003 entitled "System with a multiport memory and N processing units for concurrently/individually executing 2N multi-instruction words at first/second transitions of a single clock cycle".

10. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

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A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Valerie Darbe whose telephone number is (703) 305-9839.

12. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.



ALYSSA H. BOWLER
SUPERVISORY PATENT EXAMINER
GROUP 2300

VAD
November 3, 1994